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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,222	06/08/2006	Atsushi Ohma	040356-0591	3852

22428 7590 05/20/2010

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EXAMINER	
YANCHUK, STEPHEN J	
ART UNIT	PAPER NUMBER
1795	

MAIL DATE	DELIVERY MODE
05/20/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/582,222	OHMA, ATSUSHI	
	Examiner	Art Unit	
	STEPHEN YANCHUK	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02/03/2010*.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. All outstanding objections and rejections are withdrawn in light of applicant's amendment filed on 2/03/2010

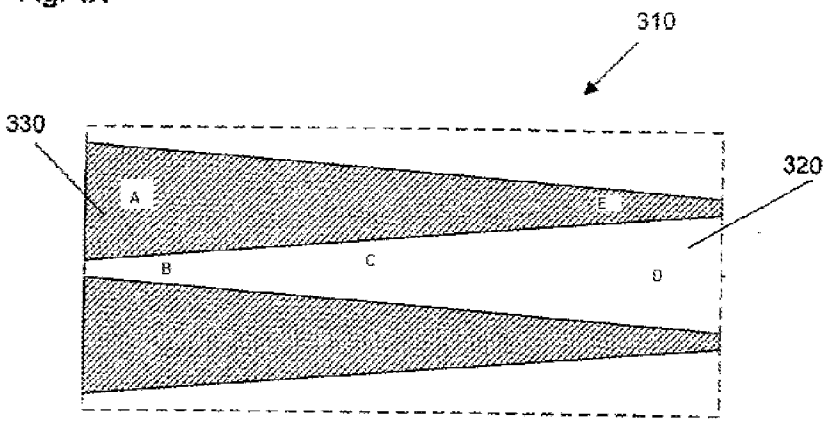
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in prior office action.

3. The new grounds of rejection set forth below are necessitated by applicant's amendment filed on 2/03/2010. The following action is properly made final.

4. The 112 rejection is overcome by amendment.

5. Although the 112 rejection is overcome by amendment, the way in which the claim is written able to be broadly interpreted. The various regions shown by "A-E" are possible regions that can be used to define "1st region" and "2nd Region".

Fig. 4A



Claim Rejections - 35 USC § 102

1. Claims are rejected under 35 U.S.C. 102(b) as being anticipated by Knights et al (PGPUB 2003/0077501).

Claim 11: The instant claim is to a separator comprising ribs wherein it is commonly known that separator is also defined as a bi-polar plate or a plate between the electrode-membrane-electrode assembly and the ribs are entities forming a gas or fluid flow channel. Upon inspection of the specification, the claim to temperature variation is due to non-uniformities in the gas flow path and coolant channels, wherein Knight teaches such limitations. One specific example is temperature dependency based on sectional area.

Knights teaches an electrochemical fuel cell having reactant flow passages with non-uniform design to increase reactant access to adjacent fluid distribution layer at the outlet region as compared to the inlet region [Abstract]. Knight teaches a fuel cell comprising: A membrane with electrodes on opposite sides [Paragraph 4], the plurality of cells [Description, Figure 3], at least a first region and second region wherein temperatures of the first region are higher due to change of channel structure of the flow field [Figure 4-6]. The gas diffusion is improved by the embodiments of figure 4-6, specifically figure 4 wherein the reactant flow passage widens [Paragraph 32]. It can be interpreted that each region can be higher in temperature or lower in temperature than any other region. The structure of the system goes through start up, steady state, and shut down. During Start up: section B is hotter than C hotter than D; Steady state: Section D may be hotter than C hotter than B. Sections A and E are inherently going to be lower temperature than the B-D

Claim 12: 1st region is element C and 2nd region is element B or D.

Claim 13: Knights teaches coolant flow channels that mirror the reactant flow passages [Paragraph 14, 34-39]. If region 1 is C then element B or D as the 2nd element reject this claim based on where the inlet of the coolant is, with or against the flow of the fuel.

Claim 14: This claim compared element C of a middle fuel cell with the same element C of an outer cell. It is an inherent property that the middle will have a higher temperature during operation due to heat sources being on both sides of it whereas the end portions will only have 1.

Claim 15: 1st section is element C and 2nd section is element B wherein B is smaller in sectional area than C

Claim 16: The 1st section has not been defined structurally and is therefore open to interpretation, Sections B, C, D widen toward outlet and are lower in temperature than sections A and E as well as each other.

Claim 17: Section 1 being C or D has section B or C, respectively, where section 1 has smaller ribs wherein the ribs are the area that gas does not flow.

Claim 18: The width of the rib, around element E decreases from a 1st region of element C.

Claim 19-20: Knight teaches using carbon as filler materials which do not completely block the passage of reactants [Paragraph 28, 30]. The relative porosity of the gas diffusion electrode will increase as the reactant moves from inlet to outlet since it is in contact with more surface area of the electrode. This is true because a region of the electrode covered by a rib has an effective porosity of 0 in the stacking direction.

Response to Arguments

2. Applicant's arguments with respect to claim 11 have been considered but are moot in view of the new ground(s) of rejection.

The applicant has failed to identify that there are multiple stages of operation that change the temperature of the regions as well configurations of the flow plate. The applicant is encouraged to approach the claims from a structural standpoint since flow rate and exposure to catalyst is directly related to temperature of the region. Stating structural limitations with relation to inlet and outlet will more closely define the structure. It is the examiner's opinion that defining the structure by temperature regions in a temperature variable structure is going to be difficult to get patented as has been addressed above.

Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN YANCHUK whose telephone number is (571)270-7343. The examiner can normally be reached on Monday through Thursday 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/STEPHEN YANCHUK/

Examiner, Art Unit 1795

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795